

**DEVELOPMENT OF HIGH PERFORMANCE PORCELAIN AND  
ALUMINA FOAM STRUCTURE FOR POROUS MEDIUM BURNER**

**by**

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## LIST OF ABBREVIATIONS

3D	Three dimensions
AF	Air-fuel
CSD	Chemical solution deposition
CMC	Carboxy-methyl cellulose
CVD	Chemical vapour deposition
EDX	Energy dispersive X-ray
ICDD	International Centre for Diffraction Data
IR	Infra-red
PE-CVD	Plasma enhanced-chemical vapour deposition
PEG	Polyethylene glycol
PIM	Porous inert media
PMB	Porous medium burner
PVA	Poly(vinyl alcohol)
PVD	Physical vapour deposition
RBAO	Reaction bonded Al <sub>2</sub> O <sub>3</sub>
SEM	Scanning electron microscope
SRT	Sponge replication technique
syngas	Synthetic gas
TGA	Thermogravimetric analysis
UHC	Unburned hydrocarbon
XRD	X-ray diffraction
XRF	X-ray fluorescence

## LIST OF UNITS AND SYMBOLS

$A$	Area
$Al$	Aluminum
$Al_2O_3$	Alumina
$C$	Geometric constant
$C_p$	Specific heat
$CaO$	Calcium oxide
$CuO$	Cupric/copper oxide
$Cr$	Chromium
$CO/CO_u$	Carbon oxides
$d$	diameter of open cell
$F$	Force/load
$Fe_2O_3$	Iron oxide
$K$	Thermal conductivity
$k_R$	Photon conductivity
$k_p$	Phonon conductivity
$k_S$	Thermal conductivity of solid phase
$k_G$	Thermal conductivity of air
$k_T$	Total thermal conductivity
$K_2O$	Potassium oxide
$l$	Length
$l_R$	Mean free path of radiation energy
$M_s$	Moment
$m_1$	Dry weight

$m_2$	Suspended weight
$m_3$	Water saturated weight
MgO	Magnesium oxide
Na <sub>2</sub> O	Sodium oxide
Ni	Nickel
NO/NO <sub>x</sub>	Nitrogen oxides
$P_o$	Open porosity
$P$	Porosity
P <sub>2</sub> O <sub>5</sub>	Phosphorous oxide
Pa.s	Pascal.second
Pe	Peclet number
ppi	Pore per-inch
ppm	Part per-million
SiC	Silicon carbide
SiO <sub>2</sub>	Silica/quartz/cristobalite
SnO	Tin oxide
$t$	Thickness
$T$	Temperature
SO <sub>3</sub>	Sulfur trioxide
TiO <sub>2</sub>	Titanium oxide
$V_o$	Volume of open space
$V_c$	Volume of the closed space
$V_s$	Solid volume
vol. %	Volume percentage
wt. %	Weight percentage